

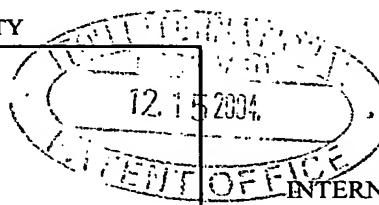
PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

14.12.2004

Applicant's or agent's file reference

R04211PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/JP2004/012779International filing date (day/month/year)
27.08.2004Priority date (day/month/year)
29.08.2003

International Patent Classification (IPC) or both national classification and IPC

Int.Cl' G05F 1/56

Applicant

RICOH COMPANY, LTD.

1. This opinion contains indications relating to the following items:

Box No. I Basis of the opinion
 Box No. II Priority
 Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 Box No. IV Lack of unity of invention
 Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 Box No. VI Certain documents cited
 Box No. VII Certain defects in the international application
 Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP 2004/012779

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

a sequence listing
 table(s) related to the sequence listing

b. format of material

in written format
 in computer readable form

c. time of filing/furnishing

contained in the international application as filed.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority for the purposes of search.

3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/ 012779

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-15	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-15	NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO

2. Citations and explanations

<The following document has been considered for the purpose of this report:>

D1 = JP 2002-32133 A(TOREX DEVICE K.K.) 31.01.2002, [0023]-[0030], Fig 1
 D2 = JP 2002-91580 A(RICOH COMPANY, LTD.) 29.03.2002, [0012]-[0023], Fig 1, 2
 D3 = US 2003/0020446 A1(VIEHMANN) 30.01.2003, Fig 1
 D4 = US 5892402 A(TSUBAKI et al.) 06.04.1999, line 22 to line 45, column 1,
 Fig 1
 D5 = JP 5-250055 A(NEC CORP.) 28.09.1993, [0019], Fig 2
 D6 = JP 2003-177828 A(RICOH COMPANY, LTD.) 27.06.2003, [0022], Fig 1

The subject matter of claim 1, 3, 4, 9-11, 13-15 does not appear to involve an inventive step in view of D1 and D2.

The inventions disclosed in D1 and D2 share the problem in that the increase of a voltage drop across the fixed resistor. The person skilled in the art would easily conceive the idea of applying the technical feature a proportional current supply circuit unit for supplying a proportional current, which is proportional to the output current, from an output current detecting unit to a first resistance employed in D2 to the invention disclosed in D1 to solve that problem.

The subject matter of claim 2 is considered to involve an inventive step over the documents cited in the international search report.

None of the prior art documents cited in the international search report describes a resistance value of a first resistance is set such that a product of the resistance value and a proportional current provided by an output current detecting unit becomes equal to or less than a voltage drop through a second resistance, and it was not obvious for the person skilled in the art to employ that the technical feature.

The subject matter of claim 5 does not appear to involve an inventive step in view of D1, D2 and D3. A stack type current mirror circuit is well-known as a current mirror circuit.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: **Box No. V**

The subject matter of claim 6 does not appear to involve an inventive step in view of D1, D2 and D4. Cascaded two current mirror circuits are well-known as a current mirror circuit.

The subject matter of claim 7 does not appear to involve an inventive step in view of D1, D2 and D5. A Wilson type current mirror circuit is well-known as a current mirror circuit.

The subject matter of claim 8 is considered to involve an inventive step over the documents cited in the international search report.

None of the prior art documents cited in the international search report describes a proportional current supply circuit unit comprises an operation amplifying circuit, a current control transistor, current mirror circuit, and it was not obvious for the person skilled in the art to employ that the technical feature.

The subject matter of claim 12 does not appear to involve an inventive step in view of D1, D2 and D6. It is well-known to form a resistance connected to an output transistor in series by wiring resistance.